

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

1. (Original) A mining apparatus, comprising:
 - a miner;
 - a conveyor unit;
 - a steering unit connecting said miner and said conveyor unit;
 - a positioning sensor;
 - a controller responsive to said positioning sensor;
 - a first actuator carried on one of said miner, said conveyor unit and said steering unit, said first actuator positioned to a first side of a midline of said miner; and
 - a second actuator carried on one of said miner, said conveyor unit and said steering unit, said second actuator positioned to a second, opposite side of said midline of said miner;
 - whereby said first and second actuators adjust a connection angle between said miner and said conveyor unit either side of parallel to determine a directional heading for said miner.
2. (Original) The mining apparatus of claim 1, wherein said first actuator includes a first displaceable guide element and said second actuator includes a second displaceable guide element
3. (Original) The mining apparatus of claim 2, wherein said first displaceable guide element includes a first end having a first convex crown and said second displaceable guide element includes a second end having a second convex crown.
4. (Original) The mining apparatus of claim 3, wherein said first and second convex crowns have a radius of curvature of about sixteen inches.
5. (Original) The mining apparatus of claim 4, wherein said first actuator is a first hydraulic cylinder and said second actuator is a second hydraulic cylinder.
6. (Original) The mining apparatus of claim 5, wherein each of said first and said second cylinders have a bore of about 10.0 inches, a stroke of about 1.5 inches and run at up to about 3,500 psi.

7. (Original) The mining apparatus of claim 3, wherein said first and second actuators are carried on said steering unit and said first and second ends respectively engage first and second cooperating bearing surfaces on said miner.
8. (Original) The mining apparatus of claim 3, wherein said first and second actuators are carried on said steering unit and said first and second ends respectively engage first and second cooperating bearing surfaces on said conveyor unit.
9. (Original) The mining apparatus of claim 3, wherein said first and second actuators are carried on said miner and said first and second ends respectively engage first and second cooperating bearing surfaces on said steering unit.
10. (Original) The mining apparatus of claim 3, wherein said first and second actuators are carried on said conveyor unit and said first and second ends respectively engage first and second cooperating bearing surfaces on said steering unit.
11. (Original) The mining apparatus of claim 1, wherein said steering unit is connected by a first pivot pin to said miner and by a second pivot pin to said conveyor unit.
12. (Original) The mining apparatus of claim 11, wherein said first pivot pin extends along a first plane and said second pivot pin extends along a second plane, said first and second planes being substantially perpendicular to one another.
13. (Original) The mining apparatus of claim 12, wherein said first plane is horizontal and said second plane is vertical.
14. (Original) The mining apparatus of claim 12, wherein said first plane is vertical and said second plane is horizontal.
15. (Original) The mining apparatus of claim 1, further including a mineral seam sensor for locating a top and a bottom of the mineral seam being mined.
16. (Original) The mining apparatus of claim 15, wherein said mineral seam sensor is a gamma sensor.
17. (Original) A mining apparatus, comprising:
 - a miner;
 - a conveyor unit connected to said miner; and

a steering mechanism including a displaceable steering element, said steering mechanism being carried by one of said miner and said conveyor unit and said displaceable steering element engaging the other of said miner and said conveyor unit whereby said connection angle between said miner and said conveyor unit is adjusted to determine a directional heading for movement of said miner.

18. (Original) The mining apparatus of claim 17, further including a positioning sensor carried on said miner and a controller responsive to said positioning sensor.

19. (Original) The mining apparatus of claim 18, further including a mineral seam sensor for locating a top and a bottom of the mineral seam being mined.

20. (Original) The mining apparatus of claim 19, wherein said mineral seam sensor is a gamma sensor.

21. (Original) A guidance control apparatus for a mining apparatus including a miner and a conveyor unit, comprising:

a positioning sensor;

a controller responsive to said positioning sensor; and

at least one actuator responsive to said controller for adjusting a directional heading for said miner.

22. (Original) A guidance control apparatus for a mining apparatus including a miner and at least one conveyor unit, comprising:

a positioning sensor;

a controller responsive to said positioning sensor;

a steering unit connected to both said miner and said conveyor unit;

a first actuator carried by one of said miner, conveyor unit and steering unit, said first actuator being responsive to said controller to adjust a connection angle between said miner and said conveyor unit for adjusting a directional heading of said miner.

23. (Currently Amended) A method of guiding a mining apparatus including a miner and at least one conveyor unit through a mineral seam comprising:

positioning a guide mechanism between said miner and said at least one conveyor unit;

exerting a force between said miner and said at least one conveyor unit whereby a connection angle between said miner and said conveyor unit is changed, determining a directional heading of said miner; and

advancing said mining apparatus after adjusting said connection angle.

24. (Original) A method of guiding a mining apparatus including a miner and a conveyor unit through a mineral seam, comprising:

determining an actual position and heading for said miner;

comparing said actual position and heading to a desired position and heading for said miner;

adjusting a steering mechanism engaged between said miner and said conveyor unit to bring said miner to said desired directional heading; and

advancing said miner along said desired directional heading.

25. (Original) A method of guiding a mining apparatus including a miner and a conveyor unit through a mineral seam, comprising:

adjusting a heading for movement of said miner by controlling a connection angle between said miner and said conveyor unit.

26. (Currently Amended) A mining apparatus, comprising:

a miner;

an adjacent conveyor unit;

an actuator secured to said mining apparatus, said actuator including a displaceable steering element having an end engaging a bearing surface on one of said miner and said conveyor unit;

whereby said actuator adjusts a connection angle between said miner and said conveyor unit to determine a directional heading for said miner.

27. (Currently Amended) A method of guiding a mining apparatus including a miner and a conveyor unit, comprising:

positioning a guide actuator on the mining apparatus; and

Apln. No. 10/594,787
Response dated December 2, 2009
Reply to Office Communication of 11/24/2009

determining a directional heading of the miner by controlling a connection angle between the miner and the conveyor unit by exerting a steering force between the miner and the conveyor unit.